

LONG-RANGE IMPROVEMENT PLANNING
1959 THROUGH 1962
ENIWETOK PROVING GROUND

Volume I

for the
U. S. ATOMIC ENERGY COMMISSION
ALBUQUERQUE OPERATIONS OFFICE
Albuquerque, New Mexico
Contract AT - (29-2)-20

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H O L M E S & N A R V E R I N C



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LINE ITEMS AND DRAWINGS

SITE ELMER

Line Item	Description	Drawing
—	Long-Range Improvement Plan	FY 59-62 100
101	Multistory Barracks, Civilian-Type	FY 59-62 101
102	Distillation Facilities Expansion ..	—
103	Cold Storage Plant	FY 59-62 103
104	Modification of Electrical System	—
105	Addition to Mess Hall, Building 201	FY 59-62 105
106	Fuel Distribution Pipelines	FY 59-62 106
107	Repair Shop, CMR Area	FY 59-62 107
108	Addition to Laundry, Building 302	FY 59-62 108
109	Addition to Deep Water Pier, Building 142	FY 59-62 109
110	Ground-Level Fresh Water Reservoir	FY 59-62 110
111	Game Courts	—
112	Task Group 7.1 Club	FY 59-62 112
113	Task Group 7.5 Club	FY 59-62 113
114	Addition to TG 7.3 Headquarters, Building 221	—
115	Extension to Quarters, Building 120	FY 59-62 115
116	Communications Repair Shop	FY 59-62 116
117	Roads and Outside Storage Areas	—
118	Fire Protection, Phase II	—
119	DUKW Repair Shop	FY 59-62 119
120	Relocate and Add to Movie Theater	FY 59-62 120

Line Item	Description	Drawing
121	1000-Seat Movie Theater	FY 59-62 121
122	Sewerage Facilities	FY 59-62 122
123	Camp Department Office Building	FY 59-62 123
124	Safety Administration and Warehouse Building	FY 59-62 124
125	Air Dispatch Facility	FY 59-62 125
126	Wet Garbage Disposal Units	—
127	Camp Supply Warehouse	FY 59-62 127
128	Day Rooms	FY 59-62 128
129	Radio and Television Center	FY 59-62 129
130	Fencing	—
131	Replace Small Craft Ramp	—
132	Telephone Plant Expansion	—
133	Multistory Barracks, Civilian-Type	FY 59-62 133
134	Heavy Equipment Repair Shop	FY 59-62 134
135	Electronics and Communications Warehouse	FY 59-62 135
136	1000-Man Mess Hall	FY 59-62 136
137	Cement Storage Warehouse	FY 59-62 137
138	Modifications to Hospital	FY 59-62 138
139	Salt Water Intake for Distillation Plant	FY 59-62 139
140	Replace Teletype Equipment	—
141	Addition to Post Office, Building 204	FY 59-62 141
142	Addition to Sheet Metal Shop, Building 314	FY 59-62 142
143	Radio Communications Building	FY 59-62 143
144	300-Foot Communications Tower	FY 59-62 144
145	Laboratory Building	FY 59-62 145
146	Addition to Beach Club, Building 190	FY 59-62 146
147	Addition to Beach Club, Building 152	FY 59-62 147
148	Replace Gas Storage Sheds	FY 59-62 148
149	Replace Fence, POL Farm	—
150	Permanent Foam Plant, POL Farm	FY 59-62 150
151	Fresh Water Distribution System	FY 59-62 151
152	Fire Sprinkler Systems	—
153	Consolidated Maintenance Repair Shop	FY 59-62 153
154	Storage for Power Units	FY 59-62 154

Line Item	Description	Drawing
155	Battery Shop, Building 168	FY 59-62 155
156	Addition to Guard Quarters, Building 205	FY 59-62 156
157	Fallout Decontamination Facilities	—
158	Extension to Deep Water Pier	FY 59-62 109
159	Ground Drainage	—
160	Multistory Barracks, TG 7.1 Supervision	FY 59-62 160

SITE FRED

—	Long-Range Improvement Plan	FY 59-62 200
201	Aircraft Hangar with Lean-To's	FY 59-62 201
202	Rawinsonde Facilities	FY 59-62 202
203	Rehabilitate POL Farm	FY 59 62 203
204	Erosion Control of Airfield	—
205	Communications and Electronic Repair Shop	FY 59-62 205
206	AACS Supply and Maintenance Building	FY 59-62 206
207	Multistory Barracks, Military-Type	FY 59-62 207
208	Rehabilitate Aircraft Maintenance Shop	—
209	Aircraft Tire Warehouse	FY 59-62 209
210	Airlift Support Building	FY 59-62 210
211	Aircraft Run-up Pads and Blast Fences	—
212	Aircraft Traffic Control Tower	FY 59-62 212
213	Depot Supply Office	FY 59-62 213
214	Sand Blast Shop, Building 532	FY 59-62 214
215	Signal Equipment Repair Depot	FY 59-62 215
216	Squadron Flight-Line Maintenance Building	FY 59-62 216
217	Ordnance Shop and Office Building	FY 59-62 217
218	Armed Services Radio Station	FY 59-62 218
219	Seaplane Beaching Ramp	—
220	Garbage Pier	FY 59-62 220
221	Wet Garbage Disposal Units	—
222	Fallout Decontamination Facilities	—
223	Post Exchange Warehouse	FY 59-62 223
224	Warehouse Building	FY 59-62 224
225	Ammunition Storage Magazine	FY 59-62 225

Line Item	Description	Drawing
226	Addition to Post Exchange	—
227	Engineers' Carpentry Shop	FY 59-62 227
228	Engineers' Paint Shop	FY 59-62 228
229	Fire Protection, Phases II and III	—
230	Replace and Enlarge Personnel Pier	FY 59-62 230
231	Replace Post Exchange Office Building	FY 59-62 231
232	Post Office Building	FY 59-62 232
233	Contractor's Warehouse	FY 59-62 233
234	Dehumidify Building 605	—
235	Quarters for CTG 7.4	FY 59-62 235
236	Crash Alert Facilities	FY 59-62 236
237	Quarters for CTG 7.2	FY 59-62 237
238	Multistory Barracks, Military-Type	FY 59-62 238
239	1000-Man Mess Hall	FY 59-62 239
239A	Multistory Barracks, Military-Type	FY 59 62 207
240	Renovate and Expand Bakery, Building 35	FY 59-62 240
241	Replace Refrigeration Units	—
242	Remove Coral Head	—
243	NCO Club, Building 506	FY 59-62 243
244	Mess Office and General Supply Building	FY 59-62 244
245	Swimmers' Tavern, Building 504	FY 59-62 245
246	Officers' Beach Club, Building 2	FY 59-62 246
247	Replace Boat House and Construct Pier	FY 59-62 247
248	Recreational Building	FY 59-62 248
249	Library, Music, and TV Rooms, Building, 603	FY 59-62 249
250	Open Storage Shed	FY 59-62 250
251	Laundry Supply Storage Shed	FY 59-62 251
252	Carpentry Shop, Building 631	FY 59-62 252
253	Generator Shed	FY 59-62 253
254	Replace Crash Station	FY 59-62 254
255	Dental Clinic	FY 59-62 255
256	Expand Motor Pool	—
257	Soundproof Investigation Room, Building 647	—
258	In-Flight Lunch Kitchen	FY 59-62 258

Line Item	Description	Drawing
259	Deep Water Pier	FY 59-62 200
260	Central Spray Paint Building for Vehicles	FY 59-62 260
261	Property Disposal Warehouse	FY 59-62 261
262	Gas Cylinder Storage Buildings	FY 59-62 262
263	Special Services Warehouse	FY 59-62 263
264	Replace Officers' Club	FY 59-62 264
265	Ham Radio Shack	FY 59-62 265
266	Fire Sprinkler Systems	—
267	Enlisted Men's Club	FY 59-62 267
268	Install Hot Water Heaters in EM's Latrines	—
269	Alterations to Transmitter Building No. 4	FY 59-62 269
270	Sewerage Facilities	FY 59-62 270
271	Fresh Water Distribution Facilities	FY 59-62 271
272	Motor Pool Maintenance Shop	FY 59-62 272
273	Elmer-Fred Causeway	—
274	Pave Technical Area Road	—
275	Ground Drainage	—
276	Electrical Power and Distribution	—
277	Joint Relay Center	FY 59-62 277
278	Joint Cryptographic Center	FY 59-62 278
279	Cold Storage Warehouse	—
280	Unit Supply Building	—
281	Base Weather Station, Addition to Building 89	—
282	Paving Around Building 679	—

SITE REX

301	Explosive Storage Magazine	FY 59-62 301
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INTRODUCTION

The advanced scientific knowledge derived from nuclear tests at the U.S. Atomic Energy Commission's Eniwetok Proving Grounds requires a periodic reappraisal of available facilities to assure adequate support of test programs. Such reappraisals, together with recommendations for changes or additions to existing facilities, have been collected after each test operation in the form of Long-Range Improvement Reports. This report, covering the period FY 59 through FY 62, is a continuation of the Proposed Long-Range Improvement Report published 1 June 1956.

The preparation of this report covering the period FY 59 through FY 62 is authorized by a letter from the U.S. Atomic Energy Commission, Santa Fe Operations Office, ET:PWS-2179, dated 20 February 1956, from the Deputy Director of the Test Division.


Two general classes of construction are normally undertaken at the Eniwetok Proving Ground: the construction of scientific stations, usually considered expendable, and the plant acquisition and construction (PAC) program. The PAC program, essentially a long-range plan of permanent support facilities, is the class of construction presented in this report.

Some of the projects described in the June 1956 publication were completed during FY 57 and FY 58. The remainder of the construction as then planned, together with additional requirements, forms the basis for this report which continues and augments long-range planning through FY 62.

This report includes all new requirements of the military users, the scientific laboratories, the AEC test organization, and the supporting contractor. It also re-evaluates the projects carried over from the 1956 report according to the construction completed in 1958. The broadened scope of the program will necessitate careful planning for the utilization of real estate on both sites Elmer and Fred. To conserve space, all new permanent or semi-permanent buildings of single or multistory construction should be oriented parallel to roads or existing permanent buildings. This need for complete utilization of ground area has prompted the extensive long-range plan for utilities included in this report. The expansion of utilities will increase the capacity of the basic or primary services to accommodate future requirements.

A total of 140 projects are presented in the two volumes of this report. Volume I covers Site Elmer; Volume II, Sites Fred and Rex. Projects for Site Elmer are numbered FY 59-62-101 through FY 59-62-160; projects for Site Fred are numbered FY 59-62-201 through FY 59-62-282; the project for Site Rex is FY 59-62-301. The drawings accompanying project descriptions are numbered to correspond to the project. Drawings FY 59-62-100 and FY 59-62-200 show the location of all projects proposed in the body of this report.

Design criteria and justifications for projects included in this report were developed from two sources, namely, military users and the AEC task groups. The criteria for the projects requested by the military users through Headquarters Joint Task Force Seven were taken from:



JTF-7 letter J4/600.6, dated 14 March 1956, from the Commander of Joint Task Force Seven to the Manager of the AEC Albuquerque Operations Office.

JTF-7 letter J4/300.1, dated 27 December 1957, from the Assistant Adjutant General to the Manager of the AEC Albuquerque Operations Office.

The criteria reflecting AEC requirements were obtained during a meeting between Holmes and Narver Project Engineers and the AEC Jobsite representatives at the Eniwetok Proving Ground from 28 October 1957 through 3 November 1957.

The cost analysis submitted with this report have been made with respect to each project individually. No attempt has been made to establish priorities of construction or to formulate a budget. Cost estimates submitted in the June 1956 report have been re-evaluated on the basis of expected construction costs during FY 62 and are compatible with the construction standards of projects submitted in this report.

COST ANALYSIS

SITE ELMER

Line Items	Description	Cost (in thousands)
101	Multistory Barracks, Civilian-Type (5)	\$ 982
102	Distillation Facilities Expansion	268
103	Cold Storage Plant	243
104	Modification of Electrical System	394
105	Addition to Mess Hall, Building 201	249
106	Fuel Distribution Pipelines	85
107	Repair Shop, CMR Area	113
108	Addition to Laundry, Building 302	28
109	Addition to Deep Water Pier, Building 142	39
110	Ground-Level Fresh Water Reservoir	50
111	Game Courts	11
112	Task Group 7.1 Club	41
113	Task Group 7.5 Club	34
114	Addition to TG 7.3 Headquarters, Building 221	13
115	Extension to Quarters, Building 120	7
116	Communications Repair Shop	129
117	Roads and Outside Storage Areas	118
118	Fire Protection, Phase II	43
119	DUKW Repair Shop	20
120	Relocate and Add to Movie Theater	83
121	1000-Seat Movie Theater	113
122	Sewerage Facilities	66
123	Camp Department Office Building	28
124	Safety Administration and Warehouse Building	46
125	Air Dispatch Facility	20
126	Wet Garbage Disposal Units	72
127	Camp Supply Warehouse	63
128	Day Rooms	165



Line Item	Description	Cost (in thousands)
129	Radio and Television Center	\$ 94
130	Fencing	38
131	Replace Small Craft Ramp	32
132	Telephone Plant Expansion	162
133	Multistory Barracks, Civilian-Type (combined with Item 101)	—
134	Heavy Equipment Repair Shop	16
135	Electronics and Communications Warehouse	111
136	1000-Man Mess Hall	547
137	Cement Storage Warehouse	105
138	Addition to Hospital	25
139	Salt Water Intake for Distillation Plant	77
140	Replace Teletype Equipment	49
141	Addition to Post Office, Building 204	6
142	Addition to Sheet Metal Shop, Building 314	26
143	Radio Communications Building	343
144	300-Foot Communications Tower	66
145	Laboratory Building	57
146	Addition to Beach Club, Building 190	11
147	Addition to Beach Club, Building 152	11
148	Replace Gas Storage Sheds	48
149	Replace Fence, POL Farm	22
150	Permanent Foam Plant, POL Farm	23
151	Fresh Water Distribution System	65
152	Fire Sprinkler Systems	168
153	Consolidated Maintenance Repair Shop	218
154	Storage Power Units	35
155	Battery Shop, Building 168	25
156	Addition to Guard Quarters, Building 205	16
157	Fallout Decontamination Facilities	660
158	Extension to Deep Water Pier	120
159	Ground Drainage	182
160	Multistory Barracks, TG 7.1 Supervision	196

SITE FRED

Line Items	Description	Cost (in thousands)
201	Aircraft Hangar With Lean-To's	\$ 794
202	Rawinsonde Facilities	93
203	Rehabilitate POL Farm	256
204	Erosion Control for Airfield	521
205	Communications and Electronic Repair Shop	21
206	AACS Supply and Maintenance Building	44
207	Multistory Barracks, Military-Type (3)	710
208	Rehabilitate Aircraft Maintenance Shop	29
209	Aircraft Tire Warehouse	60
210	Airlift Support Building	52
211	Aircraft Run-ups Pads and Blast Fences	249
212	Aircraft Traffic Control Tower	116
213	Depot Supply Office	42
214	Sand Blast Shop, Building 532	8
215	Signal Equipment Repair Depot	82
216	Squadron Flight-Line Maintenance Building	39
217	Ordnance Shop and Office Building	22
218	Armed Services Radio Station	44
219	Seaplane Beaching Ramp	76
220	Garbage Pier	33
221	Wet Garbage Disposal Units	82
222	Fallout Decontamination Facilities	660
223	Post Exchange Warehouse	59
224	Warehouse Building	125
225	Ammunition Storage Magazine	96
226	Addition to Post Exchange	25
227	Engineers Carpentry Shop	40
228	Engineers Paint Shop	30
229	Fire Protection, Phase II and III	48
230	Replace and Enlarge Personnel Pier	77
231	Replace Post Exchange Office Building	19
232	Post Office Building	106
233	Contractor's Warehouse	169

Line Item	Description	Cost (in thousands)
234	Dehumidify Building 605	\$ 23
235	Quarters for CTG 7.4	37
236	Crash Alert Facilities	183
237	Quarters for CTG 7.2	37
238	Multistory Barracks, Military-Type (2)	492
239	1000-Man Mess Hall	664
239A	Multistory Barracks, Military-Type	421
240	Renovate and Expand Bakery, Building 35	116
241	Replace Refrigerator Units	—
242	Remove Coral Head	309
243	NCO Club, Building 506	73
244	Mess Office and General Supply Building	29
245	Swimmers' Tavern, Building 504	58
246	Officers' Beach Club, Building 2	48
247	Replace Boat House and Construct Pier	53
248	Recreational Building	643
249	Library, Music, and TV Rooms, Buildings 603	125
250	Open Storage Shed	16
251	Laundry Supply Storage Shed	10
252	Carpentry Shop, Building 631	18
253	Generator Shed	9
254	Replace Crash Station	32
255	Dental Clinic	52
256	Expand Motor Pool	9
257	Soundproof Investigation Room, Building 647	2
258	In-Flight Lunch Kitchen	68
259	Deep Water Pier	1,386
260	Central Spray Paint Building for Vehicles	27
261	Property Disposal Warehouse	56
262	Gas Cylinder Storage Building	48
263	Special Services Warehouse	34
264	Replace Officers' Club	97
265	Ham Radio Shack	11
266	Fire Sprinkler Systems	229

Line Item	Description	Cost (in thousands)
267	Enlisted Men's Club	\$ 74
268	Install Hot Water Heaters in EM's Latrines	134
269	Alterations to Transmitter Building No. 4	83
270	Sewerage Facilities	98
271	Fresh Water Distribution Facilities	159
272	Motor Pool Maintenance Shop	127
273	Elmer-Fred Causeway	5,084
274	Pave Technical Area Road	14
275	Ground Drainage	236
276	Electrical Power and Distribution	—
277	Joint Relay Center	144
278	Joint Cryptographic Center	48
279	Cold Storage Warehouse	380
280	Unit Supply Building	43
281	Base Weather Station, Addition to Building 89	59
282	Paving Around Building 679	10

SITE REX

301	Explosives Storage Magazine	86
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133,000

N 49,000

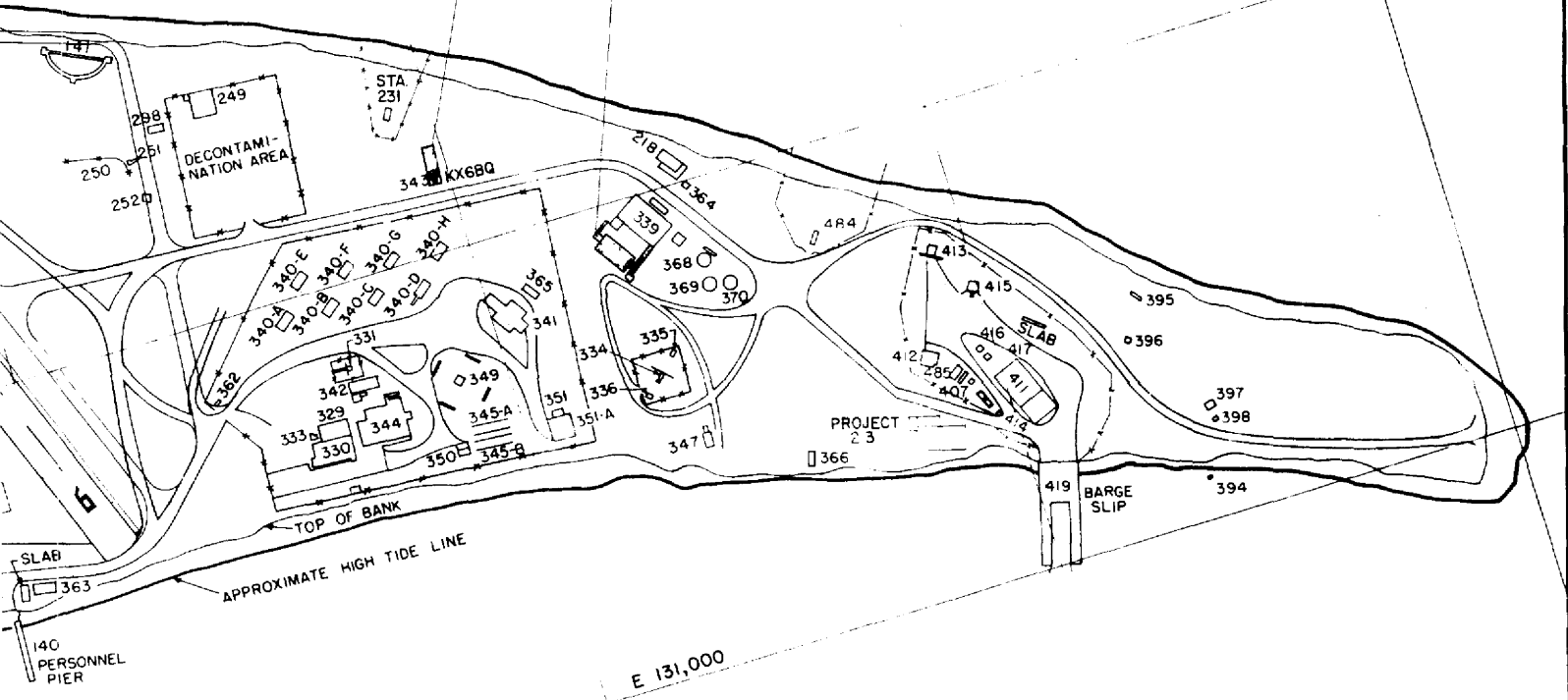
N 49,000



SCALE: 1" = 200'

(129)

(107)



SLAB
140 PERSONNEL PIER

TOP OF BANK
APPROXIMATE HIGH TIDE LINE

E 131,000

BARGE SLIP

PROJECT 23

REVISIONS				
NO.	DATE	DESCRIPTION	CH'K'D	APP.

U. S. ATOMIC ENERGY COMMISSION
ALBUQUERQUE OPERATIONS OFFICE

HOLMES & NARVER, Inc.
ENGINEERS-CONSTRUCTORS
628 SO. FIGUEROA STREET LOS ANGELES 17, CALIFORNIA

LONG RANGE IMPROVEMENT PLAN
FY/59 THRU FY/62

PLOT PLAN **SITE ELMER**

DATE: _____ DRAWN: _____ APPROVED: _____ SHEET NO. _____

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